```
=> s pHL1 vector
L1            1 PHL1 VECTOR

=> d l1 ibib ab

L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         1988:125827  HCAPLUS
DOCUMENT NUMBER:          108:125827
TITLE:                    Gene transfer system for the phytopathogenic fungus
                          Ustilago maydis
AUTHOR(S):                Wang, Jun; Holden, David W.; Leong, Sally A.
CORPORATE SOURCE:         Dep. Plant Pathol., Univ. Wisconsin, Madison, WI,
                          53706, USA
SOURCE:                   Proceedings of the National Academy of Sciences of the
                          United States of America (1988), 85(3), 865-9
                          CODEN: PNASA6; ISSN: 0027-8424
DOCUMENT TYPE:            Journal
LANGUAGE:                 English
AB   A selectable marker for transformation was constructed by transcriptional
     fusion of a U. maydis heat shock gene promoter with the hygromycin B
     phosphototransferase gene of Escherichia coli.  U. maydis Was transformed
     to hygromycin B resistance by polyethylene glycol-induced fusion of
     spheroplasts following exposure to plasmid DNA that carried the marker
     gene.  Transformation frequencies of 50 and 1000 transformants per .mu.g
     of DNA per 2 .times. 107 spheroplasts were obtained for circular and
     linear vector DNA, resp.  In the majority of transformants, the vector was
     integrated at a single chromosomal site, in either single copy or tandem
     duplication, as detd. by Southern hybridization anal. of
     electrophoretically sepd. chromosomes and of restriction-endonuclease-
     cleaved DNA.  The predominant form (82%) of vector integration was by
     nonhomologous recombination; the remainder carried the plasmid at the
     homologous heat shock gene locus.  No evidence for gene conversion or gene
     replacement was obtained in 28 transformants.  Hygromycin B
     phosphotransferase activity and resistance to hygromycin B were roughly
     correlated with the copy no. of the integrated vector at the homologous
     location.  Transforming DNA was stably maintained during mitosis and
     meiosis.  This transformation procedure and assocd. vector should permit
     the cloning of genes by direct complementation in U. maydis.


=> FIL STNGUIDE
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY     SESSION
FULL ESTIMATED COST                                    8.76        9.24

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                      ENTRY     SESSION
CA SUBSCRIBER PRICE                                   -0.69       -0.69

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FILE CONTAINS CURRENT INFORMATION.
LAST RELOADED: Apr 23, 2004 (20040423/UP).

=> d l1 ibib ab
YOU HAVE REQUESTED DATA FROM FILE 'HCAPLUS' - CONTINUE? (Y)/N:y


L1   ANSWER 1 OF 1  HCAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         1988:125827  HCAPLUS
DOCUMENT NUMBER:          108:125827
```

TITLE: Gene transfer system for the phytopathogenic fungus Ustilago maydis
AUTHOR(S): Wang, Jun; Holden, David W.; Leong, Sally A.
CORPORATE SOURCE: Dep. Plant Pathol., Univ. Wisconsin, Madison, WI, 53706, USA
SOURCE: Proceedings of the National Academy of Sciences of the United States of America (1988), 85(3), 865-9
CODEN: PNASA6; ISSN: 0027-8424
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A selectable marker for transformation was constructed by transcriptional fusion of a U. maydis heat shock gene promoter with the hygromycin B phosphototransferase gene of Escherichia coli. U. maydis Was transformed to hygromycin B resistance by polyethylene glycol-induced fusion of spheroplasts following exposure to plasmid DNA that carried the marker gene. Transformation frequencies of 50 and 1000 transformants per .mu.g of DNA per 2 .times. 107 spheroplasts were obtained for circular and linear vector DNA, resp. In the majority of transformants, the vector was integrated at a single chromosomal site, in either single copy or tandem duplication, as detd. by Southern hybridization anal. of electrophoretically sepd. chromosomes and of restriction-endonuclease-cleaved DNA. The predominant form (82%) of vector integration was by nonhomologous recombination; the remainder carried the plasmid at the homologous heat shock gene locus. No evidence for gene conversion or gene replacement was obtained in 28 transformants. Hygromycin B phosphotransferase activity and resistance to hygromycin B were roughly correlated with the copy no. of the integrated vector at the homologous location. Transforming DNA was stably maintained during mitosis and meiosis. This transformation procedure and assocd. vector should permit the cloning of genes by direct complementation in U. maydis.

```
=> file hcaplus medline biosis embase biotechds
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY     SESSION
FULL ESTIMATED COST                                    0.06       14.32

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                      ENTRY     SESSION
CA SUBSCRIBER PRICE                                    0.00       -1.38

FILE 'HCAPLUS' ENTERED AT 10:53:35 ON 29 APR 2004
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FILE 'MEDLINE' ENTERED AT 10:53:35 ON 29 APR 2004

FILE 'BIOSIS' ENTERED AT 10:53:35 ON 29 APR 2004
COPYRIGHT (C) 2004 BIOLOGICAL ABSTRACTS INC.(R)

FILE 'EMBASE' ENTERED AT 10:53:35 ON 29 APR 2004
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FILE 'BIOTECHDS' ENTERED AT 10:53:35 ON 29 APR 2004
COPYRIGHT (C) 2004 THOMSON DERWENT AND INSTITUTE FOR SCIENTIFIC INFORMATION

=> s pHLB29
L2            1 PHLB29

=> d l2 ibib ab

L2    ANSWER 1 OF 1  BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2004-05981  BIOTECHDS
TITLE:            Alkaline lipase useful as laundry detergent, isolated from
```

Vibrio metschnikovii RH530 N-4-8;
recombinant enzyme production in Escherichia coli

AUTHOR: JIN G; JHON S; LEE H; RHO H
PATENT ASSIGNEE: CJ CORP
PATENT INFO: WO 2004001029 31 Dec 2003
APPLICATION INFO: WO 2003-KR1227 23 Jun 2003
PRIORITY INFO: KR 2002-35410 24 Jun 2002; KR 2002-35410 24 Jun 2002
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-082499 [08]

AB DERWENT ABSTRACT:

NOVELTY - An alkaline lipase (I) isolated from Vibrio metschnikovii RH530 N-4-8 comprising a fully defined sequence of 185 amino acids (S1) as given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (1) polynucleotide (II) encoding (S1); (2) recombinant vector (III) comprising (II); (3) host cell (IV) transformed by (III); and (4) detergent comprising (I).

BIOTECHNOLOGY - Preparation: (I) is produced by culturing (IV) (claimed). Preferred Polynucleotide: (II) comprises a fully defined sequence of 555, 798 or 2578 base pairs as given in the specification. Preferred Recombinant Vector: (III) is pHL1, **pHLB29** or pHAAH38.

USE - (I) is useful as an enzyme for laundry detergent (claimed).

ADVANTAGE - (I) has high residual enzyme activity and high compatibility.

EXAMPLE - Culture medium comprising tryptone, yeast extract, sodium chloride in sodium carbonate buffer was used for culturing Vibrio metschnikovii RH530 N-4-8, at 30 degreesC. The cells were collected and treated with lysozyme to lyse the cell. The resultant product was treated with phenol and chloroform to remove protein, and a precipitate was removed by centrifugation. A Vibrio chromosomal DNA was obtained from the supernatant. The obtained chromosomal DNA was cut with a restriction enzyme HindIII to be recombined with a cloning vector pUC19, followed by transforming Escherichia coli HB101, thus cloning a DNA fragment containing a 3.2 kb alkaline lipase gene. The resulting recombinant vector was referred to as a vector pHL1. After treatment with the restriction enzyme HindIII, an electrophoresis with 1% agarose gel was performed. The agarose gel electrophoresis showed that the alkaline lipase gene was cloned. To confirm that a DNA fragment containing an alkaline lipase gene derived from V. metschnikovii, which is contained in a recombinant vector pHL1, is identical with the gene from V. metschnikovii, Southern blotting was performed. DNA of 3.2 kb was treated with an exonuclease Bal31 to subclone the same in a minimum length required for expression of a lipase. Production of the lipase was confirmed by formation of a clear halo, and the result of subcloning showed that 2.6 kb DNA fragment was necessary for lipase activity. The recombinant vector containing such a gene having a minimum length was referred to as **pHLB29**. DNA of 2.6 kb fragment was subcloned in a direction opposite to that of a SmaI site of pUC19, and referred to as pHAAH38. Although the 2.6 kb DNA fragment was subcloned in a reverse direction relative to a lac promoter, pHAAH38 produced a clear halo at a tricaprylin culture medium, confirming that an alkaline lipase promoter existed in the 2.6 kb DNA fragment and the promoter used when it is transcribed from E. coli. (35 pages)

=> d his

(FILE 'HOME' ENTERED AT 10:50:33 ON 29 APR 2004)

FILE 'STNGUIDE' ENTERED AT 10:50:38 ON 29 APR 2004

FILE 'HOME' ENTERED AT 10:50:41 ON 29 APR 2004

FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, BIOTECHDS' ENTERED AT 10:51:17 ON

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     29 APR 2004
L1             1 S PHL1 VECTOR

     FILE 'STNGUIDE' ENTERED AT 10:52:27 ON 29 APR 2004

     FILE 'HCAPLUS' ENTERED AT 10:53:24 ON 29 APR 2004

     FILE 'STNGUIDE' ENTERED AT 10:53:25 ON 29 APR 2004

     FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, BIOTECHDS' ENTERED AT 10:53:35 ON
     29 APR 2004
L2             1 S PHLB29

=> s alkaline lipase and dna
L3            22 ALKALINE LIPASE AND DNA

=> dup rem l3
PROCESSING COMPLETED FOR L3
L4            15 DUP REM L3 (7 DUPLICATES REMOVED)

=> focus l4
PROCESSING COMPLETED FOR L4
L5            15 FOCUS L4 1-

=> d l5 1-15 ibib ab

L5   ANSWER 1 OF 15  HCAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         2003:220114  HCAPLUS
DOCUMENT NUMBER:          138:349494
TITLE:                    Cloning and sequencing of genomic DNA
                          encoding alkaline lipase from
                          Penicillium expansum PF898
AUTHOR(S):                Lin, Lin; Xie, Bi-feng; Yang, Guan-zhen; Shi,
                          Qiao-qin; Lin, Qi-ying; Xie, Lian-hui; Wu, Song-gang;
                          Wu, Xiang-fu
CORPORATE SOURCE:         Institute of Virology, Fujian Agriculture and Forestry
                          University, Fuzhou, 350002, Peop. Rep. China
SOURCE:                   Zhongguo Shengwu Huaxue Yu Fenzi Shengwu Xuebao
                          (2003), 19(1), 12-16
                          CODEN: ZSHXF2; ISSN: 1007-7626
PUBLISHER:                Zhongguo Shengwu Huaxue Yu Fenzi Shengwu Xuebao
                          Bianweihui
DOCUMENT TYPE:            Journal
LANGUAGE:                 Chinese
AB   Penicillium expansum PF898 produces an alk. lipase (PEL) with industrial
     value.  Based on the cloning of PEL cDNA by the methods of 3'RACE and
     5'RACE, two primers were designed and the full-length genomic DNA
     was amplified from total DNA of the fungus by the method of PCR.
     The amplified DNA sequence of 1404 bp includess PEL coding area,
     3' and 5' non-coding region.  Anal. of the nucleotide sequence indicated
     that the genomic DNA of PEL (GenBank accession no. AF330635)was
     composed of 1135 bp and had six exons and five short introns (58 bp,47
     bp,50 bp, 56 bp and 69 bp) The no. of introns of PEL is more than that of
     other fungi lipases that have been sequenced and they are all short
     introns.  The 3' noncoding region is composed of 195 bp with an AATAAA
     sequence appeared at position 156 nt and the poly(A) tail is at the
     position 182 nt downstream of stop coden TGA. 5' non-coding region of 74
     bp was sequenced and the TATA box was found at - 24 to - 27 nt of the
     gene.  The homol. is about 39% .apprx. 49% between the genomic DNA
     sequence of PEL and that of other lipases from fungi.  The homol. is about
     42% .apprx. 57% between the introns of lipases from PEL and other several
     fungus.

L5   ANSWER 2 OF 15  HCAPLUS  COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER:         1998:692098  HCAPLUS
```

DOCUMENT NUMBER: 130:77772
TITLE: Characterization of an **alkaline lipase** from Proteus vulgaris K80 and the **DNA** sequence of the encoding gene
AUTHOR(S): Kim, Hyung-Kwoun; Oh, Tae-Kwang
CORPORATE SOURCE: Applied Microbiology Research Group, KIST, Korea Research Institute of Bioscience and Biotechnology, Taejon, 305-600, S. Korea
SOURCE: Proceedings of the World Conference on Oilseed and Edible Oils Processing, Istanbul, Oct. 6-10, 1996 (1998), Meeting Date 1996, Volume 2, 346-349. Editor(s): Koseoglu, S. S.; Rhee, K. C.; Wilson, Richard F. AOCS Press: Champaign, Ill.
CODEN: 66VYAN
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Alk. lipase was isolated from a Proteus vulgaris K80 obtained from soil near a sewage treatment plant. Effects of temp. and pH. on the K80 lipase are reported. The gene was cloned and sequenced and homol. with related lipases is examd. The lid sequence and interfacial activation of K80 lipase are discussed. .

L5 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1996:47727 HCAPLUS
DOCUMENT NUMBER: 124:197009
TITLE: Characterization of an **alkaline lipase** from Proteus vulgaris K80 and the **DNA** sequence of the encoding gene
AUTHOR(S): Kim, Hyung-Kwoun; Lee, Jung-Kee; Kim, Hyoungman; Oh, Tae-Kwang
CORPORATE SOURCE: Applied Microbiology Research Group, Korea Research Institute of Bioscience and Biotechnology, P.O. Box 115, Yusung, Taejon, 305-600, S. Korea
SOURCE: FEMS Microbiology Letters (1996), 135(1), 117-21
CODEN: FMLED7; ISSN: 0378-1097
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A facultatively anaerobic bacterium producing an extracellular alk. lipase was isolated from the soil collected near a sewage disposal plant in Korea and identified to be a strain of Proteus vulgaris. The mol. mass of the purified lipase K80 was estd. to be 31 kDa by SDS-PAGE. It was found to be an alk. enzyme having max. hydrolytic activity at pH 10, while fairly stable in a wide pH range from 5 to 11. The gene for lipase K80 was cloned in Escherichia coli. Sequence anal. showed an open reading frame of 861 bp coding for a polypeptide of 287 amino acid residues. The deduced amino acid sequence of the lipase gene had 46.3% identity to the lipase from Pseudomonas fragi.

L5 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1997:706004 HCAPLUS
DOCUMENT NUMBER: 128:31829
TITLE: **Alkaline lipase** of Pseudomonas pseudoalcaligenes and its encoding genes
INVENTOR(S): Lien, Shun Fu; Chiu, Chien Ming; Chui, Kuan Hsiang
PATENT ASSIGNEE(S): Daido Kufun Co., Ltd., Taiwan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 09275987 A2 19971028 JP 1996-119638 19960417
PRIORITY APPLN. INFO.: JP 1996-119638 19960417
AB A 2.9-kb **DNA** fragment contg. 2 open reading frames encoding alk. lipase is isolated from the chromosome of Pseudomonas pseudoalcaligenes strain F-111. Gene lipA and gene lipB encoding a 290- and a 340-amino-acid polypeptide, resp., are disclosed. Also claimed is the method for the prodn. of alk. lipase in transgenic Escherichia coli.

L5 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2003:397867 HCAPLUS
DOCUMENT NUMBER: 139:64174
TITLE: Cloning of an **alkaline lipase** gene from Penicillium cyclopium and its expression in Escherichia coli
AUTHOR(S): Wu, Minchen; Qian, Zhikang; Jiang, Peihong; Min, Taishan; Sun, Chongrong; Huang, Weida
CORPORATE SOURCE: Medical Department, Southern Yangtze University, Jiangsu, 214063, Peop. Rep. China
SOURCE: Lipids (2003), 38(3), 191-199
CODEN: LPDSAP; ISSN: 0024-4201
PUBLISHER: AOCS Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The gene encoding an alk. lipase of Penicillium cyclopium PG37 was cloned with four steps of PCR amplification based on different principles. The cloned gene was 1,480 nucleotides in length, consisted of 94 bp of promoter region, and had 6 exons and 5 short introns ranging from 50 to 70 nucleotides. The open reading frame encoded a protein of 285 amino acid residues consisting of a 27-AA signal peptide and a 258-AA mature peptide, with a conserved motif of Gly-X-Ser-X-Gly shared by all types of alk. lipases. However, this protein had a low homol. with lipases of P. camembertii (22.9%), Humicola lanuginosa (25.6%), and Rhizomucor miehei (22.3%) at the amino acid level. The mature peptide encoding cDNA was cloned and expressed in Escherichia coli on pET-30a for confirmation. A distinct band with a M.W. of 33 kDa was detected on SDS-PAGE. Results of a Western blot anal. and an enzyme activity assay verified the recombinant 33-kDa protein as an alk. lipase. Its catalytic properties were not changed when compared with its natural counterpart.
REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 1998:414682 HCAPLUS
DOCUMENT NUMBER: 129:64079
TITLE: Cloning, expression and nucleotide sequence of an **alkaline lipase** gene from Peudomonas pseudoalcaligenes F-111
INVENTOR(S): Lin, Shuen-fuh; Chiou, Chien-ming; Chuang, Kuang-hsiang
PATENT ASSIGNEE(S): Tatung Co., Ltd., Taiwan
SOURCE: U.S., 22 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5766913	A	19980616	US 1996-606888	19960226

PRIORITY APPLN. INFO.: US 1996-606888 19960226
AB Gene lipA from P. pseudoalcaligenes F-111 encoding alk. lipase is disclosed. This invention also discloses expressing lipA in Escherichia coli in order to obtain the lipase. The clone contg. the lipA gene was found to contain a further gene, lipB, which is proposed to control

expression of lipA.
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 15 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2004-05981 BIOTECHDS
TITLE: **Alkaline lipase** useful as laundry detergent, isolated from Vibrio metschnikovii RH530 N-4-8; recombinant enzyme production in Escherichia coli
AUTHOR: JIN G; JHON S; LEE H; RHO H
PATENT ASSIGNEE: CJ CORP
PATENT INFO: WO 2004001029 31 Dec 2003
APPLICATION INFO: WO 2003-KR1227 23 Jun 2003
PRIORITY INFO: KR 2002-35410 24 Jun 2002; KR 2002-35410 24 Jun 2002
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 2004-082499 [08]
AB DERWENT ABSTRACT:
NOVELTY - An **alkaline lipase** (I) isolated from Vibrio metschnikovii RH530 N-4-8 comprising a fully defined sequence of 185 amino acids (S1) as given in the specification, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for: (1) polynucleotide (II) encoding (S1); (2) recombinant vector (III) comprising (II); (3) host cell (IV) transformed by (III); and (4) detergent comprising (I).

BIOTECHNOLOGY - Preparation: (I) is produced by culturing (IV) (claimed). Preferred Polynucleotide: (II) comprises a fully defined sequence of 555, 798 or 2578 base pairs as given in the specification. Preferred Recombinant Vector: (III) is pHL1, pHLB29 or pHAAH38.

USE - (I) is useful as an enzyme for laundry detergent (claimed).

ADVANTAGE - (I) has high residual enzyme activity and high compatibility.

EXAMPLE - Culture medium comprising tryptone, yeast extract, sodium chloride in sodium carbonate buffer was used for culturing Vibrio metschnikovii RH530 N-4-8, at 30 degreesC. The cells were collected and treated with lysozyme to lyse the cell. The resultant product was treated with phenol and chloroform to remove protein, and a precipitate was removed by centrifugation. A Vibrio chromosomal **DNA** was obtained from the supernatant. The obtained chromosomal **DNA** was cut with a restriction enzyme HindIII to be recombined with a cloning vector pUC19, followed by transforming Escherichia coli HB101, thus cloning a **DNA** fragment containing a 3.2 kb **alkaline lipase** gene. The resulting recombinant vector was referred to as a vector pHL1. After treatment with the restriction enzyme HindIII, an electrophoresis with 1% agarose gel was performed. The agarose gel electrophoresis showed that the **alkaline lipase** gene was cloned. To confirm that a **DNA** fragment containing an **alkaline lipase** gene derived from V. metschnikovii, which is contained in a recombinant vector pHL1, is identical with the gene from V. metschnikovii, Southern blotting was performed. **DNA** of 3.2 kb was treated with an exonuclease Bal31 to subclone the same in a minimum length required for expression of a lipase. Production of the lipase was confirmed by formation of a clear halo, and the result of subcloning showed that 2.6 kb **DNA** fragment was necessary for lipase activity. The recombinant vector containing such a gene having a minimum length was referred to as pHLB29. **DNA** of 2.6 kb fragment was subcloned in a direction opposite to that of a SmaI site of pUC19, and referred to as pHAAH38. Although the 2.6 kb **DNA** fragment was subcloned in a reverse direction relative to a lac promoter, pHAAH38 produced a clear halo at a tricaprylin culture medium, confirming that an **alkaline lipase** promoter existed in the 2.6 kb **DNA** fragment and the promoter used when it is transcribed from E. coli. (35 pages)

L5 ANSWER 8 OF 15 MEDLINE on STN

ACCESSION NUMBER: 1998189963 MEDLINE
DOCUMENT NUMBER: PubMed ID: 9521811
TITLE: **Alkaline lipase** from brain: is it the same enzyme as pancreatic lipase from pancreas?.
AUTHOR: Tsujita T; Sumida M; Sumiyoshi M; Kameda K; Okuda H
CORPORATE SOURCE: School of Medicine, Ehime University, Shigenobu, Ehime, Onsen-gun, 791-02, Japan.
SOURCE: Archives of biochemistry and biophysics, (1998 Apr 1) 352 (1) 44-50.
Journal code: 0372430. ISSN: 0003-9861.
PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
ENTRY MONTH: 199805
ENTRY DATE: Entered STN: 19980514
Last Updated on STN: 19980514
Entered Medline: 19980504

AB A new **alkaline lipase** was detected in rat brain and its properties were compared with those of the well-characterized pancreatic lipase and pancreatic lipase-related protein 2. The activity of the **alkaline lipase** was determined using trioleoylglycerol emulsion at pH 8.0. Subcellular fractions were prepared from brain homogenates by differential centrifugation. Lipase activities of the cytosolic fraction (the supernatant obtained by differential centrifugation of 100,000g) were stimulated by addition of colipase and bile salts and inhibited by addition of an antibody against rat pancreatic lipase. The partially purified enzyme had an isoelectric point of pH 6.8, which was identical to that found for rat pancreatic lipase. The enzyme had interfacial activation and dependence on colipase in the presence of bile salts. The enzyme had no measurable phospholipase A activity. The band produced by the enzyme on SDS-polyacrylamide gel electrophoresis was identical to that of the rat pancreatic lipase when detected by immunoblotting analysis using an antibody against pancreatic lipase. These results show that pancreatic lipase such as **alkaline lipase** is in rat brain.

L5 ANSWER 9 OF 15 EMBASE COPYRIGHT 2004 ELSEVIER INC. ALL RIGHTS RESERVED. on STN
ACCESSION NUMBER: 1998220023 EMBASE
TITLE: Development of a lipase fermentation process that uses a recombinant Pseudomonas alcaligenes strain.
AUTHOR: Gerritse G.; Hommes R.W.J.; Quax W.J.
CORPORATE SOURCE: W.J. Quax, Pharmaceutical Biology, University of Groningen, Antonius Deusinglaan 1, 9713 AV Groningen, Netherlands. w.j.quax@farm.rug.nl
SOURCE: Applied and Environmental Microbiology, (1998) 64/7 (2644-2451).
Refs: 39
ISSN: 0099-2240 CODEN: AEMIDF
COUNTRY: United States
DOCUMENT TYPE: Journal; Article
FILE SEGMENT: 004 Microbiology
LANGUAGE: English
SUMMARY LANGUAGE: English

AB Pseudomonas alcaligenes M-1 secretes an **alkaline lipase**, which has excellent characteristics for the removal of fatty stains under modern washing conditions. A fed-batch fermentation process based on the secretion of the **alkaline lipase** from P. alcaligenes was developed. Due to the inability of P. alcaligenes to grow on glucose, citric acid and soybean oil were applied as substrates in the batch phase and feed phase, respectively. The gene encoding the high-**alkaline lipase** from P. alcaligenes was isolated and characterized. Amplification of lipase gene copies in P. alcaligenes with

the aid of low- and high-copy-number plasmids resulted in an increase of lipase expression that was apparently colinear with the gene copy number. It was found that overexpression of the lipase helper gene, lipB, produced a stimulating effect in strains with high copy numbers (>20) of the lipase structural gene, lipA. In strains with lipa on a low-copy-number vector, the lipB gene did not show any effect, suggesting that LipB is required in a low ratio to LipA only. During scaling up of the fermentation process to 100 m3, severe losses in lipase productivity were observed. Simulations have identified an increased level of dissolved carbon dioxide as the most probable cause for the scale-up losses. A large-scale fermentation protocol with a reduced dissolved carbon dioxide concentration resulted in a substantial elimination of the scale-up loss.

L5 ANSWER 10 OF 15 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1998-01799 BIOTECHDS
TITLE: Lipolytic enzymes useful as detergent additives at high pH; Gliocladium sp., Verticillium sp. or Trichophaea saccata recombinant **alkaline lipase** expression in Aspergillus oryzae
AUTHOR: Hirayama S; Taira R; Borch K; Sandal T; Halkier T; Oxenboll K M; Nielsen B R
PATENT ASSIGNEE: Novo-Nordisk
LOCATION: Bagsvaerd, Denmark.
PATENT INFO: WO 9741212 6 Nov 1997
APPLICATION INFO: WO 1997-DK179 22 Apr 1997
PRIORITY INFO: DK 1996-501 25 Apr 1996; DK 1996-500 25 Apr 1996
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1997-549717 [50]
AB A new lipolytic enzyme **DNA** fragment is cloned in a plasmid present in Escherichia coli DSM 10591, DSM 10590 or DSM 11298. The enzyme may be produced by: (1) growing Gliocladium sp. CBS 173.96, Verticillium sp. CBS 830.95, or Trichophaea saccata CBS 804.70; or (2) by isolating the **DNA**, combining the **DNA** with an expression signal in a vector and using this to transform a host (e.g. Aspergillus oryzae) which is cultured. The new **DNA** may be isolated by cloning a cDNA library from the strains in suitable vectors, transforming yeast cells and screening for expressed lipolytic activity in positive clones. The enzymes have specified sequences, or are at least 60% homologous. Enzymes have improved lipase (EC-3.1.1.3) and/or cutinase activity at alkaline pH, and improved oil hydrolysis activity on cotton/olive oil swatches. The enzymes may be used as: surfactant additives (e.g. non-dusting granulates or stabilized liquids) to remove fatty stains; for laundry and dishwashing at a high pH; or for interesterification, total hydrolysis of fats and oils, or optical isomer resolution. (71pp)

L5 ANSWER 11 OF 15 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1996-15062 BIOTECHDS
TITLE: **Alkaline lipase** for detergent use; Botryosphaeria sp. or Guignardia sp. recombinant enzyme production by vector expression in e.g. Aspergillus sp., for application as a surfactant additive
AUTHOR: Hirayama S; Halkier T
PATENT ASSIGNEE: Novo-Nordisk
LOCATION: Bagsvaerd, Denmark.
PATENT INFO: WO 9630502 3 Oct 1996
APPLICATION INFO: WO 1996-DK123 27 Mar 1996
PRIORITY INFO: DK 1995-830 14 Jul 1995; DK 1995-344 30 Mar 1995
DOCUMENT TYPE: Patent
LANGUAGE: English
OTHER SOURCE: WPI: 1996-455350 [45]
AB An **alkaline lipase** (I, EC-3.1.1.3) which is immunologically reactive with an antibody raised against a purified lipase produced by Botryosphaeria sp. or Guignardia sp., and which has

optimum activity at pH 9-11 in the presence of 50 mM Ca2+ is claimed. Also claimed are: 1) a biologically pure culture of Botryosphaeria sp. CBS 102.95; and 2) a method for producing recombinant (I) by isolating an (I)-encoding **DNA** sequence from Botryosphaeria sp. or Guignardia sp., combining the sequence with expression elements in a vector, transforming a host (e.g. Aspergillus sp.) with the vector, culturing the transformant, and recovering (I) from the culture medium. (I) is produced by culturing (I)-producing Botryosphaeria berengeriana MAFF 06-45001, Botryosphaeria berengeriana F.sp. pilicola MAFF 06-45002, Botryosphaeria dothidea JCM 2733, 2735, 2736, 2737, Botryosphaeria parva ATCC 58191, Botryosphaeria ribis CBS 504.94 or ATCC 56125, Botryosphaeria ribis var. chromogena CBS 121.26, Botryosphaeria xanthocephala ATCC 60638, Botryosphaeria sp. CBS 102.95, Guignardia laricina IFO 7887 or 7888, or Guignardia paulowniae MAFF 03-05151. (43pp)

L5 ANSWER 12 OF 15 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 1992-01713 BIOTECHDS
TITLE: New **alkaline lipase** from Bacillus species ; Bacillus pumilus **DNA** sequence; vector expression in transformant; potential application in surfactant composition
PATENT ASSIGNEE: Kali-Chemie
PATENT INFO: DE 4111321 17 Oct 1991
APPLICATION INFO: DE 1991-111321 8 Apr 1991
PRIORITY INFO: DE 1990-12070 14 Apr 1990; DE 1991-111321 8 Apr 1991
DOCUMENT TYPE: Patent
LANGUAGE: German
OTHER SOURCE: WPI: 1991-311800 [43]
AB New lipases (EC-3.1.1.3), secreted by Bacillus sp., have a pH optimum in the alkaline range and a temp. optimum of 30-40 deg. Also new are: i. **DNA** sequences encoding the lipases having a protein sequence at least 70% (preferably 90%) homologous with a sequence (A); ii. transformation vectors containing the **DNA** sequences; iii. transformed microorganisms containing these vectors; and iv. Bacillus pumilus strains DSM 5776, DSM 5777 and DSM 5778. (A) contains 213 amino acids (including the signal peptide sequence) and is reproduced in the specification together with the encoding **DNA** sequence (793 bp). The lipase is useful in washing, cleaning, bleaching and dishwashing compositions, used at 30-40 deg. The compositions also preferably contain a protease. (29pp)

L5 ANSWER 13 OF 15 MEDLINE on STN
ACCESSION NUMBER: 1999155797 MEDLINE
DOCUMENT NUMBER: PubMed ID: 10036772
TITLE: Constituents of the tapetosomes and elaioplasts in Brassica campestris tapetum and their degradation and retention during microsporogenesis.
AUTHOR: Ting J T; Wu S S; Ratnayake C; Huang A H
CORPORATE SOURCE: Department of Botany and Plant Sciences, University of California, Riverside 92521, USA.
SOURCE: Plant journal : for cell and molecular biology, (1998 Dec) 16 (5) 541-51.
Journal code: 9207397. ISSN: 0960-7412.
PUB. COUNTRY: ENGLAND: United Kingdom
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF084554
ENTRY MONTH: 199903
ENTRY DATE: Entered STN: 19990402
Last Updated on STN: 20000303
Entered Medline: 19990325
AB In Brassica anthers during microsporogenesis, the tapetum cells contain two abundant lipid-rich organelles, the tapetosomes possessing oleosins

and triacylglycerols (TAGs), and the elaioplasts having unique polypeptides and neutral esters. B. campestris, for its simplicity of possessing only the AA genome and one predominant oleosin of 45 kDa, was studied. In the developing anthers, the lipids and proteins of the tapetosomes and elaioplasts were concomitantly accumulated but selectively degraded or retained. Upon incubation of isolated tapetosomes in a pH-5 medium, the predominant 45 kDa oleosin underwent selective enzymatic proteolysis to a 37 kDa fragment, which was not further hydrolyzed upon prolonged incubation. The unreacted 45 kDa oleosin was retained in the organelles, whereas the 37 kDa fragment was released to the exterior. The fragment would become the predominant 37 kDa polypeptide in the pollen coat. Isolated tapetosomes did not undergo hydrolysis of the TAGs upon incubation in media of diverse pHs. An **alkaline lipase** in the soluble fraction of the anther extract was presumed to be the enzyme that would hydrolyze the tapetosome TAGs, which disappeared in the anthers during development. The tapetum elaioplasts contained several unique polypeptides of 31-36 kDa. The gene encoding a 32 kDa polypeptide was cloned, and its deduced amino acid sequence was homologous to those of two proteins known to be present on the surface of fibrils in chromoplasts. Upon incubation of isolated elaioplasts in media of diverse pHs, the organelle polypeptides were degraded completely and most rapidly at pH 5, whereas the neutral esters remained unchanged; these neutral esters would become the major lipid components of the pollen coat. The findings show that the constituents of the two major tapetum organelles underwent very different paths of degradation, or modification, and transfer to the pollen surface.

L5 ANSWER 14 OF 15 MEDLINE on STN
ACCESSION NUMBER: 2001555126 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11601622
TITLE: Characterization of the lipA gene encoding the major lipase from Pseudomonas aeruginosa strain IGB83.
AUTHOR: Martinez A; Soberon-Chavez G
CORPORATE SOURCE: Departamento de Microbiologia Molecular, Instituto de Biotecnologia, Universidad Nacional Autonoma de Mexico, Cuernavaca, Morelos.
SOURCE: Applied microbiology and biotechnology, (2001 Sep) 56 (5-6) 731-5.
Journal code: 8406612. ISSN: 0175-7598.
PUB. COUNTRY: Germany: Germany, Federal Republic of
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF237723
ENTRY MONTH: 200204
ENTRY DATE: Entered STN: 20011017
Last Updated on STN: 20020419
Entered Medline: 20020418

AB The lipases produced by Pseudomonas have a wide range of potential biotechnological applications. Pseudomonas aeruginosa IGB83 was isolated as a highly lipolytic strain which produced a thermotolerant and **alkaline lipase**. In the present work, we have characterized the P. aeruginosa IGB83 gene (lipA) encoding this enzyme. We describe the construction of a lipA mutant and report on the effect of two carbon sources on lipase expression.

L5 ANSWER 15 OF 15 BIOTECHDS COPYRIGHT 2004 THOMSON DERWENT/ISI on STN
ACCESSION NUMBER: 2001-06770 BIOTECHDS
TITLE: Over-expression and properties of a purified recombinant Bacillus licheniformis lipase: a comparative report on Bacillus lipases;
enzyme expression in Escherichia coli, purification and characterization
AUTHOR: Nthangeni M B; Patterton H G; van Tonder A; Vergeer W P; Litthauer D

CORPORATE SOURCE: Univ.Orange-Free-State
LOCATION: Department of Microbiology and Biochemistry, University of the Free State, P.O. Box 339, Bloemfontein, 9300, South Africa.
Email: nthangen@micro.nw.uovs.ac.za
SOURCE: Enzyme Microb.Technol.; (2001) 28, 7-8, 705-12
CODEN: EMTED2
ISSN: 0141-0229
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Polymerase chain reaction using degenerate primers was used to clone the gene encoding extracellular lipase (EC-3.1.1.3) from Bacillus licheniformis strain DSM 12369 or strain UOFS. Genomic **DNA** encoding the mature lipase was subcloned into expression vector plasmid pET20b(+). High level expression of the lipase by Escherichia coli JM109(DE3) cells harboring the vector was observed upon induction with IPTG at 30 deg. The recombinant lipase was expressed as a fusion protein with a C-terminal hexahistidine affinity tail. Single-step purification was achieved by metal chelate affinity chromatography on Ni-2+-chelated nitriloacetic acid. The purified enzyme had a specific activity of 130 U/mg with p-nitrophenyl palmitate as substrate. Optimum activity was shown at pH 10-11.5, with high stability at alkaline pH values up to 12. The enzyme was active toward p-nitrophenyl esters of short to long chain fatty acids, with a marked preference for esters with C6 and C8 acyl groups. Amino acid sequence similarity was shown to lipases from Bacillus subtilis and Bacillus pumilus. It is proposed that Bacillus lipases be classified into 2 distinct subfamilies of their own. (29 ref)

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FILE 'STNGUIDE' ENTERED AT 10:50:38 ON 29 APR 2004

FILE 'HOME' ENTERED AT 10:50:41 ON 29 APR 2004

FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, BIOTECHDS' ENTERED AT 10:51:17 ON 29 APR 2004
L1 1 S PHL1 VECTOR

FILE 'STNGUIDE' ENTERED AT 10:52:27 ON 29 APR 2004

FILE 'HCAPLUS' ENTERED AT 10:53:24 ON 29 APR 2004

FILE 'STNGUIDE' ENTERED AT 10:53:25 ON 29 APR 2004

FILE 'HCAPLUS, MEDLINE, BIOSIS, EMBASE, BIOTECHDS' ENTERED AT 10:53:35 ON 29 APR 2004
L2 1 S PHLB29
L3 22 S ALKALINE LIPASE AND DNA
L4 15 DUP REM L3 (7 DUPLICATES REMOVED)
L5 15 FOCUS L4 1-

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